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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/997,998	11/30/2001	Mara G. Prentiss	H00498/70153 TJO	4037

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EXAMINER

RODRIGUEZ, JOSEPH C

ART UNIT	PAPER NUMBER
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3653

DATE MAILED: 04/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/997,998	<b>Applicant(s)</b> PRENTISS ET AL. <span style="float: right;">N</span>	
	<b>Examiner</b> Joseph C Rodriguez	<b>Art Unit</b> 3653	1

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE \_\_\_\_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-106 is/are pending in the application.
- 4a) Of the above claim(s) 1-54,59,64,73-75,80-95 and 103-106 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 55-58,60-63,65-72,76-79 and 96-102 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                                        |                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                            | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>6</u> . | 6) <input type="checkbox"/> Other: ____.                                                |

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election with traverse of 55-58, 60-63, 65-72, 76-79 and 96-102 in Paper No. 11 is acknowledged. The traversal is on the grounds that no burden is present. This is not found persuasive as there is no burden requirement in this type of species election.

The requirement is still deemed proper and is therefore made FINAL.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 55-56, 58, 60, 61, 63 68-72, 76-79, 96-102 are rejected under 35 U.S.C. 102(b) as being anticipated by Allen et al. ("Allen")(US '665).

Allen teaches a microfluidic system (Fig. 1-3, 5a-6b and 11) comprising a channel (52 or 90) and a magnetic feature formed within the channel (near 75 or 56; col. 5, ln. 48 et seq.), wherein the chemical or biological species are manipulated by the

magnetic field (col. 4, ln. 64-col. 5, ln. 47). Here, the "array of features" can be regarded as the different types of magnetic fields the system is capable of producing.

Further, Applicant is respectfully reminded that the material or article worked upon by the apparatus does not limit apparatus claims. See MPEP 2115.

Claims 55-58, 60-63, 65, 79 and 96-102 are rejected under 35 U.S.C. 102(e) as being anticipated by Ahn et al. ("Ahn")(US '614).

Ahn teaches a microfluidic system (Fig. 1-7) comprising a channel (between polymer substrate 50 and 60; para. 63) and an array of magnetic features completely contained within the channel (Fig. 4a-5b, near 52; para. 65), wherein the chemical or biological species are manipulated by the magnetic field (Abstract). Here, the "array of features" can be regarded as posts.

Claims 55, 56, 58, 60, 62, 63, 66-68, 76-79 and 96-99 are rejected under 35 U.S.C. 102(e) as being anticipated by Backhouse (US '970).

Backhouse teaches a microfluidic system (Fig. 1-10f) comprising a channel (Fig. 8, near 82, 84, 86, 88) and an array of magnetic features completely contained within the channel (near 76, 80; col. 4, ln. 55 et seq.).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 57 is rejected under 35 U.S.C. 103(a) as being unpatentable over Allen or Backhouse in view of Ahn.

Allen or Backhouse as set forth above teach all that is claimed except for expressly teaching a polymer substrate. This feature, however, is well-known in the microfluidic arts. For instance, Ahn teaches that it is well known to construct microfluidic substrates with polymers (para. 53-55). Moreover, the mere choice of substrate material can clearly be regarded as a common design element. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention of Allen or Backhouse as taught above as polymer substrate material is a common design choice.

Claims 66 and 67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allen in view of Backhouse (US '970).

Allen as set forth above teaches all that is claimed except for expressly teaching a channel having a width less than 10 micrometers. This feature, however, is well-known in the microfluidic arts. For instance, Backhouse teaches a microfluidic with the claimed channel widths (Abstract). Moreover, the channel width can be regarded as a common design element based on the desired particle manipulation size. Therefore, it would have been obvious at the time the invention was made to a person having

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ordinary skill in the art to modify the invention of Allen as taught above as channel width is a common design feature.

### ***Conclusion***

Any references not explicitly discussed above but made of record are considered relevant to the prosecution of the instant application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph C Rodriguez whose telephone number is **703-308-8342**. The examiner can normally be reached on M-F during normal business hours (9 am – 6 pm, EST).

The **Official** fax phone number for the organization where this application or proceeding is assigned is **703-872-9326** (After-Final **703-972-9327**).

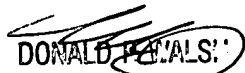
The **UnOfficial** fax phone number for the organization where this application or proceeding is assigned is **703-306-2571** or **703-308-6552**.

The examiner's **UNOFFICIAL Personal fax number** is **703-746-3678**.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the **Receptionist** whose telephone number is **703-308-1113**.

\*\*\*

April 8, 2004

  
DONALD P. ALS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3600